DOCUMENT RESUME

ED 066 374 SO 003 144

AUTHOR	Viederman, Stephen
TITLE	Population Education in the United States: A Report to the Commission on Population Growth and the American Future.
PUB DATE	Oct 71
NOTE	95p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	*Curriculum Development; *Population Education; *Population Growth

ABSTRACT

Population education is a planned, integrated, and sequential approach to population learning. It is defined as the process by which the student investigates the nature and meaning of population processes and characteristics, the causes of population changes, and the consequences of these for himself, his family, his society, and the world. Its goal is to assist students to conceptualize the relevance of population for themselves, and to assist them thereby to make rational and responsible decisions about population matters. To achieve this, relevant concepts and materials need to be integrated into the curriculum in a systematic way. Population education shares knowledge/skills with several other fields, but has its own logic, structure, and goals. It is concerned with developing understanding as well as exploring values. Conclusion-oriented and open-ended educational programs are contrasted and discussed. Emphasis is placed on value-fair approaches in which a student is viewed as an inquirer. There is no evidence that anything near an adequate population program now exists in American schools. The Office of Education's role in the development of population education is assessed and found wanting. The needs of the field are listed and suggested roles are outlined for governmental and private efforts. (ED 051 055 is the Preliminary Report.) (Author/JLB)

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POPULATION EDUCATION IN THE UNITED STATES

A Report to the

Commission on Population Growth

and the American Future

by

Stephen Viederman

October 1971

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The views expressed in this report are the author's and do not necessarily represent the position of the Population Council.

CORRIGENDUM

Revision "Population Education in the United States"
Page 56, Paragraphs 2 and 3 and note 45.

Recent discussions with the Director and the staff of the Environmental Education Unit of the Office of Education indicates that programs that are exclusively devoted to population are not considered eligible for funding under the Environmental Education Act. Only those proposals that related population to the environment will be considered. Thus, for example, educators wishing to develop a unit to investigate the social and political consequences of a zero rate of population growth, or to explore the charge that population control is genocidal, would not be eligible.(45)

The stated policy, as well as the Office of Education's performance to date, suggests that they cannot be considered as reliable source of funds for the development of population education in the United States. Populations teaching.....

(45) On October 21, 1971, Robert Gilkey, Director of the Environmental Education Staff, stated the above position to Lee Lane, ZPG, Inc. Washington. On October 28, 1971, he informed the author that activities that are exclusively concerned with population would be eligible, "if they are educationally innovative." On November 12, 1971, at a meeting with a group of population educators in Washington, staff members unequivocally stated that only projects that related population to the environment would be considered.

For too long a time, we as a Nation have responded to problems in a reactive fashion, concentrating our time, money, and energy on treating them on an emergency basis, with consequences that could have been avoided if we had exercised more foresight. One of the central lessons of our present difficulties is that we must learn to anticipate both problems and opportunities--in a sustained and systematic way--in advance of their occurrence. To do so is in no way to turn our back on present concerns. We must simultaneously attend to what is urgent, and do our best to forsee and respond to what is imminent.

National Goals Research Staff,
Toward Balanced Growth: Quantity with Quality.
Washington, D.C., 1970.

...population growth, the industrial revolution, and our economic and political systems all contribute to our environmental crisis, but none of these factors should be considered the root cause of the crisis. All of these factors are ultimately determined by human decisions which are motivated by human attitudes and values. Pollution, or any other environmental problem is a symptom of our inability to create a society with a set of social values which places the highest priority on our moral responsibility to treat other members of the society and the environment in a humane manner.

James Swan, "Environmental Attitudes and Values and Environmental Education." University of Michigan, December 1970.

Nobody ever finds anything education does as sufficient to his cause.

Alan G. Wheeler, Wyoming Department of Education, Personal Communication, July 1971.

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SUMMARY

Probably all students in American schools are exposed to some population information prior to graduation from high school, but in a random way, whereas population education is a planned, integrated, and sequential approach to population learning. Population education is defined as the process by which the student investigates and explores the nature and meaning of population processes, population characteristics, the causes of population changes, and the consequences of these processes, characteristics, and changes for himself, his family, his society, and for the world. Its goal is to assist students to conceptualize the relevance of population for themselves, to assist them thereby to make rational and responsible individual and collective decisions about population matters utilizing appropriate information and analytic skills. To achieve this goal, concepts and materials related to population need to be brought into the school curriculum in a systematic fashion.

Population education shares relevant knowledge and skills with a number of other fields, but does not belong more or less to any of these. It has its own internal logic and structure and goals. It is meant to educate not to indoctrinate. It is concerned with developing understanding, as well as with exploring values.

Population literacy is defined as the development of basic

understanding of demographic processes, of the interactions between population variables and public policy, and of human reproduction.

Conclusion-oriented and open-ended educational programs are contrasted, and the problems of the open-ended approach are discussed. Empahsis is placed on value-fair approaches where the student is viewed as an inquirer, evaluating competing theories and exploring values and their consequences.

There is no evidence that anything near an adequate population education program now exists in American schools, although there has been considerable activity in the last few years. The number of teachers suitably trained is very low, and the number of training opportunities is very small. Although there is a reasonable amount of text material for use in the classroom these materials have not been created with a systematic learning program in mind. Research is needed in a number of areas in order to insure rational development of the field. Also needed is a generally accepted definition of population education in order to avoid loss of support resulting from misunderstanding. The U.S. Office of Education's role in the development of population education is assessed and found wanting.

The needs of the field are listed, and suggested roles are outlined for the federal government, state departments of education, local school districts, university centers, and private

organizations. It is estimated that between $20 and $25 million will be needed over the next three years for program development.

* * * * * * * * *

INTRODUCTION

The Commission on Population Growth and the American Future has heard testimony from a number of persons who have urged the development of population education programs in American schools, as one important response to this country's population problems. Before discussing what population education is and might be it is important to keep in mind that recommending a school education program in response to the identification of a national problem is a uniquely American phenomenon dating back at least to the early years of this century and the influence of John Dewey.

Consider the programs that educators are now being urged to include--or have recently included--in the school curriculum: urban studies, black studies, area studies (now sometimes referred to as intercultural studies to include problems of blacks and other minority groups in the United States), drug education, driver education, sex education, family life education, environmental education, and now population education. Each of these proposed programs has its own history, its own body of adherents. It is easy to argue that each should be--must be--in the curriculum if we agree with Whitehead that "there is only one subject matter for education, and that is Life in all of its manifestations." But the length of the list (which could be expanded even further--health education, nutrition education) by its very nature makes

it difficult for educators to decide what to do and how to do it, short of revamping the entire education system.(1) Thus, if we are not farther along than we are in the development of population education in the United States, it is well to remember the educational setting and its problems.

This report is concerned only with population education in the formal school systems of the United States, and especially the elementary and secondary school levels.(2) It recognizes but does not address itself specifically to the fact that the time a student spends in the classroom or in school-related activites is only a part, and perhaps a small part, of his total learning experience. Educators must, therefore, consider the nature and the context of their students' non-formal education about population, and plan their school programs accordingly.

* * * * * * * * *

U.S. POPULATION EDUCATION: A BRIEF CHRONOLOGY

Population education is a relatively new field, both in the United States and overseas.

In 1943 the National Association of Secondary-School Principals and the National Council for the Social Studies jointly sponsored what may be the first unit on population prepared for American schools. The concern at that time was not "overpopulation." "It is becoming clear, "the authors noted, "that America and, in fact, all nations with advanced economy and culture must take account of a trend toward population decrease." They suggested that

> Interest in population arises, in part, from broad interest in understanding life and the conditions and forces that shape modern civilization. Interest in population has also been stimulated because of its relation to many economic, social, political, administrative, and personal problems, such as employment trends, income levels, the agricultural outlook, the persistence of poverty in certain regions, international relations, race relations, birth control, social-security legislation and administration, regional planning, stranded migrants, marriage, and decisions by individual men and women about the number of children they want to have.(3)

This early concern for adding population materials to the secondary school social studies curriculum does not appear to have

had much effect. The baby boom after World War II was probably responsible as concern for population decrease diminished under soaring birth rates. In 1962 Philip Hauser could still call attention to "Population--Gap in the Curriculum, "the title of his often-cited article in the Teachers College Record. Hauser observed that

> the heightened interest in population matters has had relatively little impact on the school curriculum. The facts and implications of population changes are indeed conspicuous by their absence or by their superficial and cursory treatment in American education. The ignorance of demography in the school curriculum is particularly astonishing in view of the fact that the schools themselves have been hard hit by rapid population changes.(4)

The following chronology suggests how recently population education has developed in the United States.(5)

1964 * Establishment of a materials development project at Teachers College, Columbia University with Population Council support

1965 * Distribution of "Teaching Population Dynamics," a product of the Columbia project, to 600 social studies leaders

* Sessions on population education at the annual meetings

of the National Council for the Social Studies, the National Association of Geography Teachers, and Planned Parenthood/World Population

1966 * Establishment of program at Harvard University, Center for Studies in Education and Development

1967 * Planned Parenthood survey of population and sex education in the schools

* "Resource Unit on Population Pressures," produced by the Baltimore, Maryland, School System

1968 * People! published under the auspices of the Population Reference Bureau

* University of North Carolina interest developing in population education

1969 * Utah State University Summer Institute in Population first supported by National Science Foundation

* University of Delaware, University of Michigan, Western Washington State College developing interest in population education

* Population education staff position added at the Population Council

1970 * Sessions on population education at meetings of the National Science Teachers Association, the National Council for the Social Studies, the American Association

of Colleges of Teacher Education, the National Congress on Optimum Population and the Environment

* Population Council meeting of American experts on population education
* Manressa Workshop on Population Education sponsored by Planned Parenthood of Maryland, the Population Reference Bureau, and the Carolina Population Center.
* Institute for the Study of Health and Society teacher's guide project begun with federal support
* Population Education Act introduced into the Congress but not passed
* Environmental Education Act, P.L.91-516, passed including some reference to population
* Commission on Population Growth and the American Future established by President Nixon.

Not reflected in the above is the activity of individual teachers who, on their own initiative, have been trying to introduce population materials into their classrooms in the absence of more broadly formulated population education programs. But despite their activities, and the greatly increased activity of universities and private organizations during the last five years, the situation in American schools is probably little improved over that described by Hauser in 1962.

* * * * * * * *

WHAT IS POPULATION EDUCATION?

Population materials are included, and have probably always been included, in the elementary and secondary school curriculum in the United States. History teachers have dealt with the migrations. open the American west. Geography teachers have dealt with population size and distribution here and overseas. Biology teachers have dealt with the relationships between the size of populations, both animal and human, and their resource base, particularly food. This teaching of population does not, however, constitute a population education program. Whereas the former has been random, the latter implies, by definition, a planned, integrated, and sequential approach to the problems of population learning.

Population education is defined as the process by which the student investigates and explores the nature and meaning of population processes, population characterisitics, the causes of population change, and the consequences of these processes, characteristics, and changes for himself, his family, his society, and for the world. It is a process whereby the student learns that individual acts, such as having children or moving from one place to another, have demographic consequences. He learns that the consequences of these individual acts have implications, both social and biological, for his family, for the society in which he lives, and for the world as whole, implications which in turn affect him as an individual.

The goal of population education is to assist students to conceptualize the relevance of population for themselves, to assist them thereby to make rational and responsible individual and collective decisions about population matters utilizing appropriate information and analytic skills. For the family the goal can be stated as responsible fertility behavior, for the community, as rational and responsible decisions on population and public policy. In order to achieve this goal, concepts and materials related to population need to be brought into the school curriculum in a systematic fashion.

The content of population education programs will include some of the content now taught in many different disciplines, such as biology, demography, economics, geography, history, philosophy, psychology, religion, and sociology, and in other interdisciplinary fields, such as environmental education and family life and sex education. But the fact that population education programs share relevant knowledge and skills with a number of other fields does not mean that population education belongs more or less to any of these fields. Rather it represents a synthesis of knowledge from many fields, with its own structure and internal logic.

Population education is meant to educate, not to propagandize or indoctrinate. Population education views population not as a "problem" to be solved, but as a "phenomenon" to be understood.

Understanding of the population phenomenon will enable the student to perceive when and if the United States and the world has population problems, what the nature and magnitude of the problems might be, and what governmental policies and individual actions might be necessary and effective in dealing with these problems. Thus the goal of understanding is not purely intellectual. It is rather to provide the intellectual underpinning for responsible action. But population education also encourages the student to view himself within the context of the broad range of familial and societal relationships which his actions and his life style affect and are affected by both now and in the future. Thus, population education programs must also involve students in an exploration of their own values and attitudes.

* * * * * * * *

POPULATION EDUCATION AND ENVIRONMENTAL EDUCATION

In the early years of the twentieth century concern for the destruction of the natural environment was translated into school programs variously called conservation or outdoor education. As urbanization increased environmental concerns spread to include manmade as well as natural environments and the programs in conservation and outdoor education were gradually subsumed under an environmental education rubric, a process which is still underway today.

> Environmental education has been defined as a program that is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve these problems, and motivated to work toward their solution.

The objectives of environmental education have been described as helping individuals to acquire:

1. A clear understanding that man is an inseparable part of a system, consisting of man, culture, and the biophysical environment, and that man has the ability to alter the interrelationships of this system....
2. A broad understanding of the biophysical environment, both natural and man-made, and its role in contemporary society....
3. A fundamental understanding of the biophysical environment problems confronting man, how these problems can be solved,

and the responsibility of citizens and government to work toward their solution....and

4. Attitudes of concern for the quality of the biophysical environment which will motivate citizens to participate in biophysical environmental problem solving.(6)

Some educators have urged that population education and environmental education be combined, or that population education be subsumed under the environmental education rubric.(7) Others, such as the Population Reference Bureau, have observed, however, that

> the community of interest [between population education, sex education and environmental education] seems not to be best served by attempting to merge these components into a single rubric.(8)

There is some relationship between population size, population growth, population distribution and various environmental problems. There is no agreement, however, on the nature of that relationship: is population the 'root cause' of environmental problems? does it merely exacerbate already existing environmental problems? or must we look elsewhere for the real causes of these problems? These are real questions, the answers to which are of considerable importance if we as a society are to deal intelligently with the problems of population and the environment. They do not, however, prove the case for a combination of the fields of population education and environmental

education.

Population concepts should be included in the curriculum of environmental education programs where appropriate, such as in a discussion of the impact of man on the biophysical environment. Similarly, the concept of the biosphere as a closed ecosystem is relevant to an understanding of various demographic phenomena, and to the success of various population policies. These shared interests would argue for greater communication between specialists in the two fields.

But just as both fields share concepts and skills each with the other, and with a whole range of other disciplines and fields as well, so too do they each have their own set of goals and purposes, and an internal logic and structure, which would preclude a fully adequate concern for the other if they were combined. Thus, for example, certain social system variables of considerable interest in population education, such as the role and status of women or the effects of education on fertility, would be likely to receive little attention in environmental education programs because they are only distantly related to environmental education goals.

The synthesis of knowledge that would permit a meaningful and intellectually valid combination of population education and environmental education has not yet been achieved. Combination of the fields at this time would require compromises that would

be unacceptable to both in terms of content and viewpoint.

* * * * * * * *

POPULATION EDUCATION, SEX EDUCATION, AND FAMILY LIFE EDUCATION

Population education is not sex education, and it is not family life education, even though it may share some content with these fields. It differs from these fields in that the demand for population education arises from a different set of historical circumstances, and is in response to a different set of contemporary issues. Thus its goal and, as a result, its overall content is different.

The Commission's Interim Report provides an indication of the spark that generated the current interest in and demand for population education. The Report observes that "the cumulative nature of population growth requires us to take the long view. The children born in this decade will be the parents of most of the children born in the year 2000." (9) If the children now in school and those still to be born are to make free and rational decisions concerning their future they must be provided with the knowledge, experience and tools necessary for decision making.

Sex education originally developed in response to a concern for changing sexual mores and behavior, and in reaction to an increase in the incidence of venereal disease and out-of-wedlock pregnancies.

Family life education grew out of a recognition that much poor academic performance among students arose as a consequence of personal and family conflicts, and out of growing evidence of family

instability.[10]

The content of sex education programs includes male and female anatomy, the physiology of reproduction, psychological similarities and differences between the sexes, and the ethics of sexual behaviors.[11] There is also a concern for learning self-respect, and for developing a self-concept which includes one's sexuality.

The content of family life education includes facts, attitudes, and skills related to dating, marriage, parenthood, and later life.[12]

While these statements of content are open to debate by specialists, what can be generally stated is that both sex education and family life education emphasize the individual. The concern is with interpersonal and familial competence and the focus is on the worth of the individual.

Population education is concerned with the interaction between the individual, the family, the society and the world. It has developed in response to a different set of issues than gave rise to the other fields. Furthermore, the time horizon of population education is not so much concerned with the present as it is with the future consequences of both present and future acts.

To say that the three fields are different is not to make a value judgment concerning their importance. Each is important and valuable in its own right and in response to the needs which called forth its development. In many respects the fields are

complementary. Aspects of family life and sex education, such as human reproduction, may be necessary but they are not sufficient for the development of population "literacy."

* * * * * * * *

THE CONTENT OF POPULATION EDUCATION: WHAT IS POPULATION LITERACY?

The boundaries of the field of population education are still in the process of being defined as efforts to translate theory into practice become more common. What follows is an effort to indicate what a student might be expected to know having completed a primary and secondary school program in population education.

A student could be expected to have developed some basic understanding of demographic processes. As a result he could better understand why personal and societal decisions made today have an impact many years in the future. He will also have explored the advantages and disadvantages of various family size norms for himself and his community. He could better understand the relationships that exist between population size and distribution, and the quality of life. He should be cognizant of the relationships that exist between population growth and the evolution of environmental problems.

A student could also be expected to have developed some basic understanding of the interactions between population variables and public policy. As a result he could better understand how various societal actions, such as a change in the role and status of women, affect and are affected by population policy. He will have explored the causes and consequences of urbanization, and the nature and rationale for population policies, both local, national and foreign. He will have been exposed to competing theories concerning the causes and consequences of population change, and what society might do to

control that change. He will have explored the reasons why people do or do not respond positively to particular governmental population policies.

Finally, the student could be expected to have some basic understandings of human reproduction, the consequences of his own fertility behavior, and the services available to assist him in planning his family if he so decides.

Although this content has been stated in terms of cognitive goals and understandings, the educational process must focus on values as well. "The value problem," as Sloan Wayland has suggested, "is the provision of experiences which will help the individual to formulate his own attitudes with awareness of the cumulative consequences for the society of his own behavior." (13)

Having sketched in broad outline the end product of the population education process, in terms of desired student learning, we are still left with the major problem of determining what content and experiences can be introduced at what age levels, in what ways, and with what desired effects. This set of questions is probably the most important facing the field of population education today, and also the most unexplored.

* * * * * * * *

VALUES, ETHICS, AND POPULATION EDUCATION (14)

In the United States education has been traditionally valued for its contribution to freedom. The need to educate and inform the people was well stated by Jefferson when he said:

> I know of no safe depository of the ultimate powers of the society but the people themselves; and if we think them not enlightened enough to exercise this authority with a wholesome discretion, the remedy is not to take it from them, but to inform their discretion.

Knowledge is the path to freedom, and education is the vehicle. That Americans turn instinctively to education to "solve" societal problems demonstrates this as does the students' demand for and the educators' response in developing "relevant" educational programs. It is assumed that education can and will help the individual to better control and/or adapt to his environment, thereby extending his freedom. The importance of education in the preservation of freedom was recognized by former Senator Joseph Tydings in the preamble to his unsuccessful bill, S.3990, the Population Education Act of 1970: "this lack of knowledge and the concern regarding growth have the potential of giving rise to coercive measures that would impinge upon the privacy and threaten the freedom of all Americans."

Discussions of population education suggest two other values of concern to educators: survival and the quality of life. The biologist Walter E. Howard, in an article entitled "The Population Crisis," suggests that "the salvation of the future is going to depend heavily on education." (15) The educator David Burleson has observed that "the history of the twentieth century becomes more and more a race between numbers and the quality of life. If we are to utilize our intelligence in our present population dilemna, we must make our educational systems relevant." (16) The values assigned highest priority will inevitably effect the approach taken to the development of population education programs.

In practice we may see the difference in terms of conclusion-oriented as contrasted with open-ended educational programs. To Howard, for example, the issue seems to be one of emotion rather than reason as the end point of the educational process. "Once sufficient awareness of the seriousness of the worlds' population-environment crisis is attained, "he writes, "people may then be sufficiently frightened and concerned to make some personal sacrifices to help improve the situation." (17) One of the objectives of a "Science and Survival" course offered by the Shawnee Mission (Kansas) South High School is stated as follows:

> that the student will understand, be able to discuss with peers and with others outside the classroom,

> and feel a personal responsibility for the effect of overpopulation and psychological stress on the quality of human life. He will feel a social responsibility to limit his own children to no more than two, and to provide educational and technological help to people throughout the world to do likewise. (Italics mine.) (18)

Almost parenthetically, they add:

> If he disagrees with this thesis, then he should be able to argue his point of view successfully as a coherent well thought-out position, not out of ignorance.

Do we teacher the advantages of the small family and the disadvantages of the large family indicating clearly what "we" think to be responsible behavior? Or do we teacher the advantages and disadvantages of various size families in the hope that the knowledge and analytic skills thereby acquired, and the values explored, will inform the students' action? In the absence of a national consensus on the nature of the population problem, and in view of the value assigned to freedom and informed choice in our tradition, the latter approach is more ethically sound, and more readily acceptable as the proper function of education. And in practical terms we should reject conclusion-oriented programs on the grounds that "young people have provided increasing evidence of their strong feelings against "manipulation" to which they feel

subjected through most of the established institutions of society, including the educational system."[19] Thus, 'persuasion' of the sort that is being openly called for or implicitly included in some population education programs may result in behaviors quite different from those desired by the program designers.

The open-ended approach is not, however, without its problems. The emphasis is upon developing skills that will enable the students to analyze facts and data, to explore values, and to formulate intelligent, informed and responsible plans for action. But, as Daniel Callahan has observed, "the trouble is that all too often there is not agreement on what the facts are, or which facts are pertinent, or on how the facts should be interpreted."[20] This problem, serious enough at the level of learned discourse, is made all the more difficult in the formal school system, particularly at the lower grade levels, where simplification, and as a result some distortion, is necessary in order to take account of the intellectual and emotional levels of development of the child.

First, there is the problem of seemingly unintentional bias, such as we have seen recently, for example, in the treatment of

blacks, and other minorities in textbooks. It is only in the very recent past that multi-ethnic textbooks have appeared which portray minorities in more equal perspective.

In an area closely related to population education, we are only now becoming aware of the roles and status of men, women and children as portrayed in textbooks. Thus, a 1969 Harper and Row Basic Reading Program adopted by the state of California for use by all four to eight year olds, suggests by implication, that a mother's life is only in the home, and pictures a father whose "chief occupation is coming home." Sex roles are clearly stereotyped for both parents and children, and are fundamentally pro-natalist. (21)

Second, we are confronted with materials which though purporting to be scientific, suggest clear bias. Thus, the Miami-Dade Junior College "Man and Environment" curriculum (22) lists as the first objective of the unit on population dynamics, "to make the student aware that overpopulation is the underlying cause of our environmental problems." It would appear that there is sufficient controversy concerning the population/pollution interface at least to put the objective as a matter for exploration rather than as a conclusion. The final objective of the unit, "to suggest effective measures for limiting populations," makes no mention of possible governmental policies in

the social, economic or educational areas. This particular curriculum gains importance primarily because its dissemination is being assisted by the U.S. Office of Education, which estimates that it will reach 400,000 students in some 350 institutions during the academic year 1971-1972, and an estimated one million students by the fall of 1972. (23)

The third problem confronting population education programs relates to the development of materials in response to a perceived problem at a time when the dimensions of the problem are not clearly delineated. Howard, for example, can assert that "there someday will be a general recognition of how uneconomic and undesirable it is to have more than one or two children." (24) Not only does this sort of statement question the very existence of children who are beyond number two in the birth order, it does so on the basis of unexplored personal conclusions.

Related to this is the problem of instant expertise that may arise in the context of crash programs. Thus, though population problems are by definition many faceted, population growth receives almost all of the attention in school materials, to the virtual exclusion of information on matters of density and distribution, for example. In view of the complexity of the issues surrounding the delineation of America's population problems such an emphasis on growth may

obscure more fundamental and more immediate concerns.

In times of crisis there is also a natural tendency to try to identify a villain. One example of this is the following, taken from the description of a simulation called "Extinction: The Game of Ecology":

> Man plays a major role in the game. Through environmental change, man builds cities and jetports that cause air pollution. Sometimes he pollutes lakes and marshes. He may clear brushland for grazing, fill marshes with garbage, or cut down woodlands for farming. Such human activities can upset the competitive balance between species in the game, and for some species can lead directly to extinction.(25)

Man's role is seen in terms of its negative consequences. The creation of cities is seen as a threat to the ecosystem, without reference to other positive effects, such as lowering infant mortality. As in the case of emphasizing the small family with children from large families, this emphasis on man the destroyer must be faced squarely in terms of its potentially negative impact on the self-concept of the young child.

The following poem, written as part of a class project by two sixth graders in Kensington, Maryland, is suggestive of the problem:

Over-Population by Allison Zusi and Lynn Grusey (26)

Fat people, skinny people, short people, tall,
Live on this world that's really quite small.
If we don't get rid of them all,
Off the world they will fall.

People, people,
All over this land,
Paper and waste,
Comes out of their hand.

There's too much pollution,
There's too many people,
Soon some will be living,
On top of a steeple!

There's even more people,
Than there are trees,
If we live any closer,
We'll all get diseased.

If we didn't have people,
We wouldn't have pollution,
Get rid of the people,
That's the only solution.

Problems of the sort outlined above are to a greater or lesser

extent endemic to all education today, which is to state a fact rather than a justification. They are perhaps exacerbated by the fact that in discussing population and responsible behavior by individuals and society in relation to population issues, the schools tend to be leading rather than following the society. In this regard population education is somewhat unique since the schools tend usually to be followers.

The issue of making population education compulsory in the schools attracts attention since at least one state, Massachusetts, has had legislation introduced to that end.[27] To the extent that the proposed programs restrict themselves to the social and environmental aspects of the population issue there would appear to be no conflict with the American legal tradition, although some groups may protest. However, to the extent that some programs might wish to emphasize or give some prominence to family planning and birth control, possible conflicts arise with those who oppose these subjects on religious grounds. A recent analysis of the American legal tradition and population policy measures concludes:

> Although we think it probable that a compulsory course [in family planning] in the public schools

> and even a requirement of a course in private schools would be upheld, they do strike at religious liberty seriously enough so that some provision for opting out would be far preferable.(28)

The right of parents to opt out of the public school system is constitutionally protected, Pierce v. Society of Sisters, 268 U.S. 510. However, that opinion (at 534) also states that there is power to direct that "certain studies plainly essential to good citizenship must be taught." This does not mean, however, that there is power to direct that particular material be used.

Even the social and environmental aspects of population study may be viewed as sensitive by some segments of the American population--notably some religious groups and some members of some minority groups. Since population education involves a consideration of alternative futures a discussion and exploration of values is inherent in the program. But a distinction must be made between types of values to be dealt with, namely procedural and substantive.(29) By virture of the nature of the educational process teachers have a right to teach procedural values, such as 'critical thinking is better than uncritical thinking.' Students must accept the scientific method as a procedure in teaching, for without it education would be impossible. Teachers should not, however, teach substantive values, such as 'democracy is better than totalitarianism,' or 'small families are

better than large families.' This does not mean that these issues should be avoided, for one of the goals of all education is, or should be, to train students to evaluate evidence within a framework of critical thinking. Rather than unquestioning acceptance the goal would be for each child to arrive at a personal philosophy or position consistent with his values, and the data that are available. To quote Callahan again:

> Good decision-making...seems to require human sensitivity, illuminating and useful principles, access to pertinent information, methods of weighing and balancing options--reason and feeling, private meditation and public discussion, good sense and good sensibilities. (30)

Population education will be most successful if the student is viewed as an inquirer. Accepting that it is impossible for teaching to be value free, population education programs can strive toward value fair positions. Positions should not be preached. Rather opportunities for evaluating competing theories and for exploring values and their consequences must be provided and encouraged.

* * * * * * * *

THE STATUS OF POPULATION EDUCATION IN THE UNITED STATES

There are roughly 85,000 elementary schools in the United States, and slightly more than 31,000 secondary schools. In 1969 there were more than 50 million children enrolled in and 2.1 million classroom teachers employed by these schools. Probably all of these schools provide some exposure to population materials for almost all of the students. But there is no evidence to suggest that anything near an adequate population education program as yet exists in American schools, even though considerable exploration has begun in the last few years.

A request for information concerning the teaching of population was mailed to persons responsible for environmental education in each of the fifty states along with a copy of the preliminary report to the Commission on Population Education.(31) The replies indicated that these persons were pleased to learn that activities were developing in population education, but suggested that little was happening at the state level. Most indicated that some population content was being included within environmental education programs, or expressed the opinion that it should be included. Most of the respondents, not surprisingly, suggested that population should be subsumed under the environmental education rubric. With one exception, New York, there was no indication of strong direction from the state department of education to pay particular attention to population issues. All indicated the difficulty of knowing what is actually being taught since most content decisions are made at the

level of the local school board, and in the classroom.

An illustrative but far from complete list of population education activities by state is appended in order to suggest the diversity of approaches now underway.

What seems clear is that much initiative has come from organizations outside of the schools themselves, such as local Planned Parenthood affiliates and Zero Population Growth, Inc. Where the school system has taken some initiative, as in the case of the Madison, Wisconsin Public Schools, there seems to be some uneasiness about the "emotional involvement" of the students. Only rarely is there evidence of a strong commitment to population study at the state level, as with the Regents of the University of the State of New York, or at the city level, as in Baltimore.

A review of the list suggests only a few planned, integrated and sequential curriculum projects covering the entire period of school going. The Delaware project has attempted a comprehensive plan, covering environmental and population content, that is now being tested even though a full complement of materials is not yet available. Western Washington State College is also planning a population and environment program for K through 12, but has not yet begun formal work. These projects will help to test the feasibility of combining the fields. Teachers College, Columbia

University has a more limited objective in creating a teacher's guide and ultimately classroom materials on population for the middle school, grades 5 through 7.

Given the crowded curriculum and the shortage of trained teachers we do not see many population courses being developed and taught at the pre-college level. In the short run, however, such courses may prove to be the most effective expedient for providing students with some population information prior to their high school graduation.

Efforts at infusing population concepts,where relevant,into existing curriculum characterize the Delaware project, and the planning of the Western Washington and Columbia projects. A suggestion of what that might look like for seventh, eighth and ninth grade social studies programs in the State of Florida as proposed by the population education group at Florida State University is shown in Table 1.

A third alternative for bringing population materials to the students' attention is the development of modules or units which replace existing units with different subject content. Such an approach is being tried by the social studies group at Indiana University, and also by the Biological Sciences Curriculum Study group.

The strengths and weaknesses of the three approaches--both

TABLE 1

Illustrative Curriculum Content

A. GEOGRAPHY AND WORLD AFFAIRS, 7th GRADE

Geography Topics	Population Topics
1. This World of Ours (General discussion of politics, economy, and social organization as they relate to the physical environment)	a) The Demographic Equation -- Population Change b) The Demographic Transition -- Modernization and Economic Development c) Dependent Populations -- Importance of Age Structure d) Population Density
2. The United States and Canada	Application and comparison of four concepts as stated under 1, above for each region
3. Latin America	Application and comparison of four concepts as stated under 1, above for each region
4. Europe	Application and comparison of four concepts as stated under 1, above for each region
5. Africa and Southwest Asia	Application and comparison of four concepts as stated under 1, above for each region
6. The Soviet Union	Application and comparison of four concepts as stated under 1, above for each region
7. Monsoon Asia	Application and comparison of four concepts for each region
8. The Oceans, the Air, and Space	Ecological Considerations
9. A Changing World (Mostly political problems of the World Community)	Population Pressure and International Conflict

Source: Florida State University, Population Education Project, 1971

TABLE I

B. AMERICAN HISTORY, 8th GRADE

	History Topic	Population Topic
1.	European Colonization of New World	People and Vital Events in the Pre-Revolutionary Era
2.	Characteristics of Colonies	Population Distribution -- Formation of Village Communities
3.	American Revolution	Natural Increase in the Early Stages of the American Demographic Transition
4.	Union Under the Constitution	Taking a Population Census Under Article I
5.	Development of Trade and Manufacture (Sectional Differences)	Economic Growth and the Rise of Cities
6.	Westward Expansion	Peopling the New Frontier
7.	Civil War	The Changing Regional Balance of Population
8.	Industrialization	Immigration as a Component of Population Change
9.	U. S. and World Affairs	World Population Growth and American Diplomacy

Source: Florida State University, Population Education Project, 1971

TABLE 1

C. CIVICS, 9th GRADE

Civics Topics	Population Topics
1. Our American Heritage (Discussion of families and religion, education, and Constitutional rights and responsibilities)	Values and Demographic Behavior
2. The Federal Government	Demographic Behavior and Freedom of Choice
3. State Government	Family Planning/Population Policies of State Government
4. Local Government	Grass Roots Interest in Population Problem, ZPG, Ecology Now, Planned Parenthood
5. The Citizen and His Government	The Individual's Contribution to Societal Demographic Trends
6. Economic Life	Differential Fertility and Mortality by SES
7. Finding a Vocation	a) Occupations relating to population b) Population and labor force
8. Making the Most of Leisure Time	Population Density and the Rise of Leisure Time
9. Living in a Changing World	a) Estimates and Projections of population change b) Social acceptance and responsible demographic behavior

Source: Florida State University, Population Education Project, 1971

from the viewpoint of increased population learning, and easier access to the schools--need to be assessed on the basis of field experimentation and evaluation. Evidence from the psychology of learning and instruction would suggest that separate, single courses are least likely to be successful in terms of population learning. The sort of reinforced behavior that might best be achieved through the development of a comprehensive and sequential plan, may,however, be virtually impossible given the structure of the individual American school and the degree of autonomy that each school has. Comprehensive planning between specialists in different fields at all grade levels will be extraordinarily difficult in practice. In the end, a mixture of all three approaches is likely to characterize population education programs for sometime to come.

Teacher training

Teacher training is at a very low level of activity. Only one institution, the University of North Carolina, offers a graduate degree in population education. Others, such as Harvard, Teachers College, Columbia, and Delaware will also admit graduate students to concentrate in population education within other areas of specialization. Much of this effort is, however, directed not to classroom teachers, but rather to program directors and administrators.

No university or school of education offers special under-

graduate pre-service training specifically concerned with population education. Neither it is likely that many schools of education will offer population content courses as a regular part of their pre-service programs.

In-service training, during the academic year, is also quite limited. One of the very few nationally funded in-service programs is being held during 1971-1972 at the State University College of Buffalo, New York. Population is studied as the second half of an environmental education program for teachers. The approach to the population issue is described as follows: "Overpopulation as the disease of which environmental deterioration is in part only a symptom."(32) Local and state Planned Parenthood affiliates have also been active in in-service teacher training, as have been a number of ZPG, Inc. chapters. The total number of teachers being reached is, however, miniscule.

One unique in-service program is being carried on by the Baltimore City Schools in collaboration with Planned Parenthood of Maryland. Inner city teachers, most of them black, are working together to make population and urban life education relevant to the inner city child. This project, which is presently slowed by lack of firm financial support, may well prove to be a model for other cities to observe and adapt.

Summer training opportunities are also very limited. Since 1969 Utah State University has conducted an institute for secondary

school social studies teachers. The emphasis has been on technical and substantive demography, which, though very useful for some teachers, is considerably more narrow than the field of population education. The University of Cincinnati conducted a four week institute during the summer of 1971, and is planning to offer it again in subsequent years. Carroll College in Wisconsin is also planning an institute for 1972. At present at most 150 opportunities are available each summer for teacher training in population content and the substance and methods of population education.

The training opportunities for college faculty members who function as teacher trainers is even more limited. Cornell University's International Population Program, with Population Council support, conducted an institute on demography and population during the summer of 1971 that will be repeated in 1972. A similar program that included teacher educators was held in Florida also during 1971. Special academic year training opportunities in population for college faculty members will be available for the first time during 1971-1972 under the National Science Foundation supported Chatauqua series, administered by the American Association for the Advancement of Science.

During the academic year 1971-1972 the Regents of the University of the State of New York in cooperation with Cornell

University and with the support of the Population Council, will publish an experimental newsletter on population education at the undergraduate level. Aimed at college teachers, to inform them of training programs and to evaluate available and new materials, this newsletter should help to increase the teaching of population to prospective teachers.

Materials

For a field in as early a stage of development as population education there is a reasonable amount of material that teachers can draw upon for classroom use and for lesson planning. A list of some of these materials, and of projects in process, is appended. By and large these materials have not, however, been created with any specific view toward a particular use in the schools, but have been offered to the schools for whatever use they may be. In addition, they are commonly the products of individual school districts, or teachers, or small, special purpose organizations unrelated generally or only peripherally related to national educational concerns. There is as yet little evidence of a population education interest among the national publishers, and only limited interest among the national curriculum revision projects, such as the Biological Sciences Curriculum Study. One of the most interesting units now available--the sociology unit in the Investigating Man's World series (Scott Foresman)--uses population material not for its own sake, but as illustrative of broader concerns.

Many educators suggest that 'textbooks are the curriculum.' If that is so, then we still have a long way to go in the population field. A review of high school social studies texts indicates that population material, if included at all, is not given prominence. Except in the most recent books, and then only in a very few, population material is highly descriptive; it does not contribute more than the facts of growth to the student's understanding of the problems. Analysis of the causes of population change, and of the consequences of these changes, is notably absent as a general rule. A systematic review of these text materials, at all grade levels, and in the natural and physical sciences as well, is needed.(33)

The large number of audio-visual materials and particularly films for classroom use also need to be carefully reviewed and analyzed; most are of uneven quality, both substantively and aesthetically.

What is need is a comprehensive list of all available materials, both printed and audio-visual. Such a list would provide a description of the material, as well as an analysis of its strengths and weaknesses, and indications as to how it might be used. A start toward that end has been made by a number of the curriculum projects, and by the Institute for the Study of Health and Society in their report to the Population Reference Bureau.(34) An effort to coordinate, extend, continually up-date and communicate

these findings must be developed in the near future.

Research

Research on a broad range of topics is also a high priority if population education is to develop expeditiously and rationally. The needs may best be described under four headings.

First, there is the knowledge base upon which curriculum will be developed. On the macro level American educators are more fortunate than their colleagues overseas in that good data do exist. Population studies and research are reasonably well developed in the United States. However, much of the knowledge base is presented in the professional literature of the demographer and population specialist, and, as a result, is not always readily available to the educator. Efforts to translate the professional literature will be needed.

At the level of the impact of population and family size on the family and the individual--in social, psychological, economic and health terms--very little information has been brought together that would be of use to the curriculum developer. This is an area of considerable urgency if curriculum materials are to be developed which are personally relevant to the student.

Second, research is needed on the knowledge and attitudes of students, teachers, administrators and parents. As Sloan Wayland has suggested:

As in any curriculum development project, it is useful to

> know what students know and believe as a basis for the selection of curriculum content. The knowledge and attitudes of teachers is important both in terms of assessing the need for in-service education and in determining to what extent prevailing attitudes may aid or hinder the acceptance of innovation.(35)

The knowledge and attitudes of administrators and the community are equally important for planning purposes.

Related to this knowledge and attitude question is the need for research on cultural practices and values related to population. To quote Wayland again:

> This may deal with such questions as the cultural meaning of the size of family, values associated with male and female children, proper age at marriage, and values associated with the rate of growth of villages and of the nation.(36)

Particular emphasis should be directed to the social and psychological value of children, and to the processes by which decisions are made to have children.

Third, the findings of research in education and psychology must be reviewed, and new research planned with respect to the psychology of population learning. At what stages in the emotional, intellectual and social development of the child is population learning most likely to occur, through what means and with

what content? Since much of the work in population education is directed toward the development of a sense of social responsibility in the child, the work of Lawrence Kohlberg and his colleagues in moral education is highly relevant.

Educational researchers should be encouraged to review existing curricula materials for their population content in order to determine the extent to which population teaching already exists. Content analysis of readily available and widely used text materials for their population related content should also be undertaken.

Educational researchers should also direct their attention to research on the diffusion of innovation in the schools, and to strategies for education development.

Finally, research and systematic evaluation of population education programs as they are implemented will be necessary. The fact that much learning goes on outside of the classroom makes this problem all the more difficult. One such project, to measure the impact of population learning as a result of exposure to various materials, has recently been proposed by a team of educators and social scientists at Florida State University.

Other Barriers

There are still other barriers to the introduction of population education into the schools that must be considered.

First, there is no clear and generally accepted definition of population education. To some the term may suggest environmental education, and they may believe that they are already working in

that area. To others, population education may conjur up images of sex education, contraceptive education, and family planning education, in the schools, thus arousing fears of political pressures associated with the teaching of those subjects. Some teachers and school administrators may assume that the goal of the program is merely the reduction of fertility, and decide that this is inappropriate subject matter for the schools. Still others, and particularly social studies teachers, may think in terms of demography, indicating their discomfort in dealing with mathematics and statistics. It is, therefore, important to develop as soon as possible a working definition that is generally acceptable to those now working in the field, and that is widely circulated to those whose assistance and support are needed to make program development a reality.

Second, there is general resistance to change in any large establishment, and the schools are no different. Furthermore, there seems to be little evidence that students are demanding more work in this area in the schools or that the teachers and the general public are deeply aware of the nature of the problems and clamoring for solutions. It would appear that the war, race, poverty and the general state of the environment are accorded higher priority.(37) Since each of these subjects has a body of adherents proposing an education program for the schools, and since the curriculum is full, change is likely to be slow.

Finally, funds for innovation and for released time for teachers to plan and experiment with new programs are limited at this time, making the development of new programs all the more difficult.

The role of the U.S. Office of Education

The Environmental Education Act, P.L.91-516, when originally proposed, did not include population within its definition of the areas to be covered. A review of the Senate and House hearings on the Bill suggests that population concerns were not uppermost in the minds of most of the Bill's sponsors or supporters.(38) In fact it required an amendment by Senator Cranston to introduce the population concept in terms of "the relationship of population to environmental deterioration and ecological imbalance." During the Senate hearings the then Commissioner of Education James E. Allen was asked whether the Office of Education would support the Cranston Amendment. He replied:

> The study of the effects of population size and growth on the quality of the environment, both natural and manmade, is an essential part of environmental/ecological education. The Office of Education, therefore, expects that it will be included as a factor in most, if not all, programs and courses dealing with problems of the environment.(39)

The Act as eventually passed defined environmental education as

> the educational process dealing with man's relationship with his natural and manmade surroundings, and including the relation of population, pollution, resource allocation and depletion, conservation, transportation, technology, and urban and rural planning to the total human environment. (Sec. 3.(3)(1). (Italics mine)

The thrust of the former Commissioner's remarks and the definition of the field provided in the Act are clear. Population as a content area can be included as part of environmental education, but population education programs, where the primary or exclusive focus is by definition on population, are not eligible for support. But population educators have been discouraged by members of the environmental education staff from applying under the provisions of the Act. And none of the proposals funded for fiscal year 1971 has even a substantial population content. Testimony before a Special Subcommittee on Human Resources of the Senate Committee on Labor and Public Welfare in October 1971 revealed that

> A Friends of the Earth survey indicated that only 6% of the grant money [from fiscal 1971 funds] was being spent on population education. This

> figure compares unfavorably with the approximately 20% devoted to other matters not even covered by the Act's definition of environmental education. F.O.E.'s survey also disclosed that proposals that include population actually received a smaller percentage of their total grant request than did those without population components.[40]

An informal survey of population education specialists conducted by the Washington office of Zero Population Growth, Inc. overwhelmingly showed that these professionals characterize federal performance in the field as "poor" or "non-existent."[41] Official testimony by the Office of Education before the same Subcommittee the week following the disclosure of these findings made no effort to refute them.[42]

The Office of Education testimony clearly and unequivocally came out for a combination of population education and environmental education under an environmental education rubric.

> The "population" problem, to our way of thinking, is as inescapably a part of the environmental crisis as are pollution, and the depletion of natural resources. Each is inseparable from the others; so that any discussion of family planning, for example, must be seen in the larger environmental context...
> In my readings of population literature I have found

> a striking area of agreement and consensus in the mutually supporting relationship of environmental education and population education....
>
> ....the Office of Education regards population and population education as an integral part of environmental studies and environmental education.

The testimony quotes from the Population Reference Bureau's Bulletin on "Population Education," in support of collaboration between the fields. No mention is made, however, of the Bureau's conclusion that merging of the fields is to neither's interest.(43) The testimony failed to distinguish between the Bureau's suggested political strategy, given the existence of environmental education funds and the schools' acceptance of environmental education as a field, and the intellectual and conceptual questions, which are ultimately of greater educational importance.

The Office of Education has indicated that it will "provide more encouragement...to obtain more and better proposals with population education as a major objective." The "Handbook for Preparing Proposals" for Fiscal Year 1972, they report, will give greater emphasis to population problems

> pointing out, by way of example, the relationships between an individual couple's decision concerning family size and the impact of population, land use, transportation,

resource allocation and urban/regional planning.[44]

But the staff that is concerned with implementing the Environmental Education Act has no competence in the population area.

Recent discussions with the Director of the staff suggest that for the first time projects that are totally population-related are considered to be eligible for funding. Thus, for example, proposals to develop units in which students would explore the economic, social, and political consequences of a zero rate of population growth, or in which students would explore the charge that population control is genocidal, would presumably be eligible for consideration, "if they are educationally innovative."[45]

Despite these apparent changes in policy, its performance to date would suggest that the Office of Education cannot, as yet, be considered a reliable source of funds for the developments of population education in the United States. Population teaching is only one of its many concerns, and planned population education programs seem to have been given no attention. Furthermore, the extreme limitations on its funding, at levels well below those authorized by the Congress, are an additional limitation to the role that it might potentially play in the development of population education programs in the United States.

* * * * * * * *

THE FUTURE OF POPULATION EDUCATION IN THE UNITED STATES

Educational change is slow and evolutionary. Although population education has educational and personal relevancy that transcends any current crisis we may face, the problems confronting our society and the world today give greater urgency to the expeditious development of the field.

Needs

Since population education is a field with a very short history its list of needs is particularly long.

There is a need to define and conceptualize the field.

There is a need to inform and educate educational leaders at the national, state and local levels concerning the nature of population problems, and about the field of population education, in order to enlist their support in the development of programs.

There is a need to train teachers in the content of the population field and in the methods of population education, through pre-service and in-service programs, summer institutes and workshops, the development of mobile teams of specialists, and other special programs.

There is a need to train teacher-trainers.

There is a need to develop materials that can be used in the classroom: teacher's guides and reference works, student texts and workbooks, slides, transparencies,sound and film cassettes, films, games and simulations, and other teaching and learning devices.

There is a need to develop model programs in different types of schools--public, private and parochial--in different settings--urban, inner-city, suburban, and rural--and in different parts of the country, in order to increase our understanding of the processes of population education and of population learning, and to give schools newly entering the field an idea of the possibilities and problems.

There is a need to conduct research on various problems related to population education: the knowledge base; knowledge and attitudes of students, teachers, administrators, and the community; the psychology of population learning; program evaluation.

There is a need to initiate and maintain a communication system between theorists, researchers and practicioners in the field to insure rapid dissemination of findings and experience, and to minimize duplication and 'reinvention of the wheel.'

There is a need to develop arrangements for communication and collaboration between population educators and those educators in other related fields, such as environmental and ecological education, sex and family life education, in order to insure the greatest possible degree of complimentarity.

There is a need to develop arrangements for communication and collaboration between demographers and other population specialists, and population educators to insure that the findings of research are translated into the language of the classroom as soon as possible.

There is a need to develop channels of communication and collaboration between population education specialists in this country and their colleagues engaged in similar endeavors overseas, in order to share experiences and to insure that the content of the American program is global.

In order to move toward the satisfaction of these and other needs that may be identified, certain institutional arrangements and committments will be necessary.

The Role of the federal government

Despite its failure to take a leading role in the development of population education programs to date, the U.S. Office of Education represents the logical locus of federal responsibility.

Ideally, the Congress should enact new legislation parallel to, but separate from, the Environmental Education Act (P.L. 91-516). This Population Awareness Education Act should be developed taking into account the special needs and goals of population education, both in terms of in-school, out-of-school and community education. A small, professionally competent Population Education Staff should be responsible for administering the programs called for under the Act. With their public Advisory Council they should be constantly assessing the state of the field, and reviewing and revising their planning accordingly.

In the absence of new legislation it is recommended that the

Congress amend the Environmental Education Act to become a Population and Environmental Education Act. The amendment should recognize the differences as well as the similarlities between the two fields. In order to insure the development of both fields the amended Act would require new levels of funding authorization. Efforts would also have to be made to insure that levels of funding close to those authorized were requested by the Administration and were appropriated by the Congress. In addition, the amendment would have to provide for an expansion or reconstitution of the Environmental Education Advisory Council to insure representation from the population education field.

If neither new legislation nor an amended Act proves possible, a last resort would be the strengthening of the Environmental Education Staff of the Office of Education, to insure that they are capable of dealing with population education concerns. This would require the addition of new staff personnel, as well as the addition of population specialists to the Advisory Council. This alternative is by far the least satisfactory because it will permit greater fragmentation of planning, and because it would cut into the already limited funding available for environmental education.

Suggesting that a Population Educational unit be established within the Office of Education does not mean that they should be the sole source of funds for support of the field in the federal government. Other sections of the U.S Office of Education should be encouraged to participate in the development of this field as appropriate to

their legislative mandates, as should other federal agencies. For example,

* The Center for Population Research should be encouraged to pay special attention to problems of research related to the development of population education programs and to their evaluation.
* The National Science Foundation should be encouraged to participate through its programs of curriculum development at the pre-college and undergraduate levels, through its support of teacher training institutes and workshops at both levels, and through the support of research.
* The Bureau of the Census, especially through its data users section, should be encouraged to work with teachers and curriculum developers to increase the ease with which Census data may be used in school programs
* The proposed National Institute of Education, with its intended concern for educational research, development and innovation, could also play an important role in the development of population education.

In view of the broad range of federal interest in population, and the fact that much of this interest is relevant to the development of population education programs, a central coordinating and information office on population affairs would be of considerable value and importance. Such an office could inform interested parties

of opportunities for support of their projects within the federal establishment, and could also direct data and research users to relevant agencies.

Whatever organizational pattern finally proves feasible, the federal government should provide funds and other encouragements and support

*for developing new and improved curricula to encourage understanding of the nature of population issues and policies

*for demonstrating the use of such curricula in model educational programs, and for evaluating their effectiveness

*for supporting research on population education

*for initiating and maintaining programs in population education at all educational levels

*for disseminating curricula materials and other information for use in educational programs throughout the United States and, where appropriate, to other countries as well

*for developing training programs for teachers and other educational personnel.(46)

The Role of state departments of education

Population education is not likely to develop with particular force without some effort at coordination and communication at the state level. To this end a population education specialist or consultant should be appointed by each state. A State Population Education Advisory Committee should also be established, including teachers, administrators, students and community leaders. The

specialist and the Advisory Committee would be responsible for overall state planning, as appropriate to the educational traditions of the state, and for program review and evaluation.

Particular functions that could be undertaken most appropriately at the state level would include:

*reviewing existing curricula and text materials already in use in the state for population-related content

*recommending and disseminating information concerning materials that are particularly useful for population education programs

*developing consultant services for use by local school districts and individual schools

*developing in-service and summer training programs and workshops

*assisting teacher training institutions to develop pre-service programs

*reporting on outstanding programs in the state and in other states

*maintaining communication with federal agencies and private organizations interested in the development of population education

*participating in cooperative programs with other states where this would seem advisable and effective

*developing materials for use in schools, using outside

consultants as necessary

*assisting with research and evaluation programs

*conducting small grants programs to assist local schools and individual teachers to develop their own materials.

The role of the local school district

Given the structure of decision making within American education most action to implement population education programs will be taken at the local level. It is at this level, in particular, where a clear understanding of the nature, purposes and content of population education becomes extremely important in order to insure community understanding and support for the program. Ideally, each district or system should have a population education coordinator who is trained in the content and methods of the field. Practically that is impossible given limitations on both human and financial resources. Thus cooperation with state agencies, with likēminded districts, and with private and community organizations with a concern for population issues, becomes of considerable importance. Motivated teachers, working with students and other members of the community who are interested in population, should be encouraged to experiment with the development of population education programs, through small grants and released time.

In the local setting particular attention should be paid to the following issues.

* The nature of the learner: the socio-economic-ethnic-religious-

demographic characteristics of the community will require special attention in dealing with population issues that may be viewed by different groups in different ways. For example, content will have to be adapted differently for children in dense urban areas, or from sub-groups within the society with distinctive values and traditions, or from rural agricultural areas.

* The characteristics of the instructional staff: Experience with other innovations suggests that the educational background of the teacher, as well as his or her attitudes and values toward the subject matter, can influence the success with which the innovation is introduced.

* The school as a social system: The introduction of a single course at one grade level is relatively simple, in part because it has relatively little impact on other parts of the system. The broader the innovation--such as the introduction of a population education program--the more people are affected, and the more difficult becomes the institutionalization of the change. Decisions to develop population education programs must take system factors into account.(47)

The role of university centers

A number of university-based population education research and development centers should be established as soon as possible to define and conceptualize the field and to assist in the development

of population education programs at the federal, state and local levels. These centers should provide a critical mass of social and natural scientists, humanists, and educators willing to devote a significant proportion of their time to the needs of population education in the United States. It is not necessary for any one center to address itself to all of the developmental problems, but each should combine a concern for theory and practice, research and program development. Working in close collaboration with teachers and school administrators, the university centers should provide the intellectual leadership necessary to expedite development of programs throughout the United States.

The role of private organizations

There are a number of private, non-governmental, organizations that have been active in the development of population education, both in the United States and overseas. The Population Reference Bureau has published materials of use to teachers and students, has sponsored conferences on the subject, and has conducted research on teacher's needs. The Population Council has made grants for teacher training programs, has supported research directly and indirectly related to population education, has supported materials development, and meetings. Planned Parenthood/World Population, both nationally and through its local affiliates, has assisted in teacher training and materials development. Zero Population Growth, Inc. has also assisted in teacher training, the development of teacher's

guides, and has provided speakers for school programs. Without the pioneering efforts of these, and other organizations, and university centers, it is likely that population education would not have advanced at all in the United States.

In the absence of a federal committment to population education the private sector will have to play an increasingly large role. They will have to identify and cultivate new sources of funding, and plan activities that are likely to achieve the broadest impact given limitations on funding.

If federal assistance becomes available these organizations should take an active part in program development, making widely available the experience that they have gained. They could also continue activities that they have begun but at a higher level of activity, assuming that additional funding would be available to them. And they could expand their activities into new areas for which their experience particularly suits them, such as the development of newsletters and other devices for increased communication.

The cost of a national program

It is estimated that between $20 and $25 million will be needed from federal funds over the next three years in order to insure the orderly and expeditious development of the field of population education in the United States. The estimated costs, by category of expenditure, are shown in Table 2. These estimates include training annually for about 1,000 teachers. As new train-

Table 2: ESTIMATED ANNUAL COSTS FOR U.S. POPULATION EDUCATION PROGRAM DEVELOPMENT FROM FEDERAL FUNDS

Curricula and materials development		$ 1,250,000
Support of model programs		500,000
Teacher training programs *		
4 Teacher trainers summer institutes @ $70,000 each (25 participants each)	$ 280,000	
4 Teacher's seven week summer institutes @ $50,000 each (30 participants each)	200,000	
8 Teacher's four week summer conferences @ $20,000 each (30 participants each)	160,000	
20 In-service teacher programs @ $20,000 each (30 participants each)	400,000	
Other training programs, including mobile teams, etc.	100,000	1,140,000
University research and development cneters 5 centers at $200,000 each		1,000,000
Research and evaluation support		1,500,000
Small grants program of up to $15,000 maximum		1,000,000
Core support for state level population education specialists and program development		1,000,000
Conferences and communications		500,000
Estimated Total Costs When Programs Operative		$ 7,890,000

*Based upon current National Science Foundation estimates

ing programs are developed at university centers and through private organizations, the training of larger numbers of teachers becomes feasible, and costs will rise.

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A Concluding note

Commenting on the preliminary report to the Commission on "Population Education in the United States," the social studies consultant for the state of Wyoming remarked that "nobody ever finds anything that education does sufficient to his cause."(48) It would seem appropriate to add this cautionary note as the enthusiasm for and interest in developing the new field of population education reaches new heights..

Edward Pohlman has recently observed that "discussions of pop ed often take for granted that pop ed will be helpful," in terms of changed population growth rates, fewer births, avoidance of births, or a changed climate of opinion concerning a variety of population related issues. He continues

> There is no research evidence that pop ed can do any of these things (so cautious skepticism is needed). But a similar cynical statement might be made about many facets of society and of educational programs. There is probably no hard research evidence that teaching Algebra or western civilization; or sex ed; or imprinting cigarette packages with health hazard warnings; or posting signs advising safety, do any good either. Lack of evidence about the value of pop ed springs from an absence of research--not from negative findings.(49)

We must be realistic in setting goals for population education programs, just as for any school program. We must recognize that the schools are but one agency of socialization, with particular strengths and particular weaknesses.

These cautions are important to guard against easy fadish enthusiams, which are so often followed by crushing disappointment and total withdrawal of interest. It is possible to assert, in the absence of evidence to the contrary, that population education programs are valid elements of a national population policy, in and of themselves. The subject matter of population education is intellectually, educationally, and personally relevant whether or not it manifests itself in terms of some particular behavior, such as lowered fertility. More importantly, carefully planned and well designed population education programs can contribute greatly to creating an atmosphere and a forum in which an important public issue, namely population, can be discussed and be debated. This will require continued encouragement and support from many agencies within the society.

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APPENDIX A:

AN ILLUSTRATIVE LIST OF POPULATION EDUCATION ACTIVITIES

California

*Planned Parenthood-World Population of Almadea-San Francisco sponsored, in conjunction with the San Francisco Unified School District and the Health Education Department, a series of teacher workshops to provide information, discuss issues, and develop materials and guides. The teachers have prepared a statement of their concern which is being forwarded to the state department of education.

*The report of the Conservation Education Advisory Committee makes reference to population, but does not focus on it.

*Various local chapters of Zero Population Growth, Inc. have produced teacher's guides and materials for students.

Colorado

*Denver ZPG, Inc. has produced a teacher's guide listing films, books, records, tapes, etc.

*The Colorado Population Institute has urged population education in the schools.

Connecticut

*The Connecticut Demographic Council, New Haven, has produced a revision of the Baltimore "Resource Unit on Population Pressures;" a new Resource Unit is still in manuscript (Population Dynamics

and Pressures, Basic Concepts and Data for Teachers, Grades 8-10); and a unit for teachers and students, "Population and Planning: An Analysis of the Greater Metropolitan Area" is nearing completion.

*The Governor's Committee on Environmental Policy in its June 1970 report recommended environmental, population and family planning education in the schools.

Delaware

*The University of Delaware population environment education project is being tested in schools throughout the state at all grade levels.

*The "Delaware Model: A Systems Approach to Science Education, Grades 5-8" includes within its purview the development, testing and dissemination of curriculum materials and instructional strategies for population education.

Florida

*Florida State University and Florida A & M University conducted in 1971 a summer institute for Florida college faculty members.

*Florida State University is working with junior high schools in the state to infuse population concepts into the social studies curriculum.

Hawaii

*A population education curriculum development project is

being proposed for action by the department of education, including research, materials development, teacher and administrator training, and evaluation.

Indiana

*An elementary school environmental education program is being developed by the Indianapolis Department of Parks and Recreation that will include "overpopulation and associated factors."

*A K-12 environmental education guide is being developed by the state department of education that will "hopefully...contain many objectives about population."

*The Social Studies Development Center of Indiana University is preparing a unit for use in 12th grade "problems of democracy" courses.

Iowa

*Population study, according to the state department of education," resolves itself into only a unit or two in the following courses in Iowa schools: economic geography, contemporary problems, sociology, biology, social sciences. Schools using the handbook, "A Guide to Develop Programs for Family Living and Personal Growth (1969)" could well work into this course emphasis on population control and other facets of the population problem."

Kansas

*Population is included in a "Science and Survival" course offered at the Shawnee Mission South High School.

Maryland

*The Baltimore school system, in cooperation with Planned Parenthood, was the first to develop a resource unit for its teachers in 1967. They have since sponsored a series of meetings with inner-city teachers to develop a program for teaching population in relation to urban life in the inner-city schools.

Massachusetts

*Teachers at Weston High School have developed a number of imaginative units for teaching population in biology and in social studies.

*In 1971 a bill was introduced into the legislature, H.3787 "providing that Ecology and the Dynamics of Human Population Growth and Consumption Be Required Subjects of Instruction in the Public Schools." Hearings were held, but the bill was not passed.

*Harvard University's Center for Studies in Education and Development has been actively engaged in population education.

Michigan

*A local ZPG, Inc. group in Petosky has introduced population materials into the regular school program.

*The Washtentaw County League for Planned Parenthood issues a News Review, an annotated bibliography, "aimed primarily at high school students looking for information for term papers

and to deal with their own problems." It is sent to all churches and schools in the area.

*A Special State Senate Committee on the Impact and Trends of Population Growth in the State, in 1971, heard testimony on the demographic impact on the provision of educational services, student attitudes toward population, and the need for population education in the schools.

*Graduate students from the University of Michigan have worked on curriculum development with the Ann Arbor schools. The University is also engaged in research on youth knowledge and attitudes.

Minnesota

*A K-12 pilot environmental education project includes population as the 9th grade unit: "Population growth and the implications for food and shelter as revealed by the students while making plans for a class reunion, branches into a comparison of animal and human range requirements and the factors which determine this."

*The Minnesota Environmental Sciences Foundation has developed a teacher's guide for population, and some smaller units that could be used in teaching population at various grade levels.

Nebraska

*A Catholic high school in Omaha offers a birth control unit

for upper division students in which theology and sociology are correlated.

New York

*The 1971 policy statement of the Regents of the University of the State of New York emphasizes "demography and the problems of population growth" as areas of particular importance for the curriculum. A consultant is developing a program statement.

*A teacher in Ludlowville developed a game, "Disaster," for use in elementary science classes.

*Some population questions were included in the Comprehensive Regents Examination in the Social Studies in January 1971.

*The State University College of Buffalo is conducting an NSF supported in-service teacher training institute, the second semester of which will be devoted to "overpopulation as the disease of which environmental deterioration is in part only a symptom."

*An experimental program, introducing population materials, was conducted during spring 1971 in the Ithaca schools, with the cooperation of Cornell University.

*Syracuse University includes population matters within its sex education and family planning training program.

*Teachers College, Columbia University is developing a teachers guide and reference for the middle school.

North Carolina

*The Caswell County Family Planning Program has published a teacher's guide to population for use at all grade levels.

*The Carolina Population Center, and the Center for Population and Environmental Education of the University of North Carolina are working on materials and guides for the schools. The only Masters degree program in the United States in population education is offered through the School of Education.

Ohio

*The University of Cincinnati offered a four week summer institute on population with NSF support during the summer 1971.

Pennsylvania

*A three day institute for 11th and 12th grade teachers during the spring 1971 has led to an outline for a multidisciplinary approach to population/environment.

Texas

*Environmental education is one of the four major areas of new concern for the Texas schools, and population density is one of the 18 components, the sum of which is the environment.

Utah

*Utah State University has conducted a summer institute on population for secondary school teachers since 1969.

Vermont

*A Middlebury College biologist has prepared and published a booklet for use in high schools, "How and Why Not to Have a Baby."

Virginia

*Hollins College biology students teach population in the Roanoke schools, using Ehrlich and Hardin as their texts.

Washington

*A teacher's guide on population has been developed for use in conjunction with the state's environmental education program.

*Teachers workshops are being planned for 1971-1972 with the assistance of ZPG, Inc.

*Western Washington State College is developing a project for K-12 population/environmental education.

Wisconsin

*The state department of public instruction has produced a booklet for teachers and students, "Pollution: Problems, Projects and Mathematical Exercises, Grades 6-9."

*Beloit College undergraduates visit local high schools, working with teachers and lecturing to students on a number of environmental problems, including population.

*Population is included as a topic in a one semester course on "Science and Society" and is described in the following manner

in the 1969 booklet of the Department of Curriculum Development of the Madison Public Schools:

> This area includes sub-areas of population numbers; distribution of populations; food supplies for specific human populations; basic requirements of populations; popu- density; birth control. (Some students may tend toward emotional involvement with this topic. It should be remembered that each student is not required to investigate every area. It should also be remembered that one of the important parameters of this course is that all topics selected for research must be scientifically based.)

*Carroll College in Waukesha has proposed a four week summer institute on population education for school teachers for 1972.

*The Milwaukee public school system is embarking upon a comprehensive environmental education program. "Most certainly population issues will be included."

Wyoming

*The state education department reports that its program is non-prescriptive. Most population teaching is probably incidental, however, "individual teachers are likely to be doing a great deal more than meets the eye."

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APPENDIX B

AN ILLUSTRATIVE LIST OF AVAILABLE MATERIALS AND PROJECTS (October, 1971)
(An asterisk indicates project in process)

1. Materials Primarily for Teachers

Anderson, Randall C. "Introducing the World Population Crisis to Secondary Social Studies Classes: An Inquiry-Oriented Instructional Strategy," Social Education, January, 1970, Vol. 34, no. 1. pps. 27-35

Biller, Edward, et. al. Resource Unit on Population Pressure: Baltimore, Maryland: Baltimore City Schools, 1967. mimeo. 24 pps. For senior high social studies.

Carey, George W. and Schwartzberg, Julie. Teaching Population Geography: An Interdisciplinary Ecological Approach. New York: Teachers College Press, 1969. 134 pps.

Chau, Ta Ngoc. Demographic Aspects of Educational Planning. Paris, France: UNESCO, International Institute for Educational Planning, 1969. Useful introduction to demography.

Connecticut Demographic Council. Resource Unit on Population Pressure. New Haven, Connecticut: Author, n.d. mimeo 30 pps. Revision of Baltimore unit above.

Elliot, Robin, et. al. "U.S. Population Growth and Family Planning: A Review of the Literature," Family Planning Perspectives, 2(4), October, 1970. (Available from Planned Parenthood-World Population).

Environmental Science Center, Curriculum Staff. Perspectives on Population: A Guide for Teachers. Minneapolis: n.d., mimeo, 18 pps.

Griffin, Paul F., editor. Geography of Population: A Teacher's Guide Palo Alto, California: Fearon Publishers, for the National Council for Geographic Education, 1969.

"Historical Population Studies," Daedalus, Spring, 1968, Vol. 97, no. 2. See especially, David Landes, "The Treatment of Population in History Textbooks," 363-384.

Horsley, Kathryn, et. al. Sourcebook for Teachers on Environment and Population. Washington, D.C.: Institute for the Study of Health and Society, 1971. 175 pps.

Intercom, (Foreign Policy Association), "Focus on World Population," 6(1), January-February, 1964.

Intercom, (Foreign Policy Association), "The World Population Crisis: What It is and Where to Get Information About It," 10(4), July-August, 1968.

Hunter, John M. and Meade, Melinda S. "Population Models in High School,"Journal of Geography, February, 1971.

Institute of Society, Ethics and the Life Sciences. Ethics, Population and the American Tradition. 3 vols. Hastings-on-Hudson, New York: author, 1971.

King, Pat, and Landahl, John, Population. Olympia, Washington: Superinetendent of Public Instruction, 1971. 44 pps. A teacher's guide.

Lorimer, Frank and Osborn, Frederick with teaching aids by Kenneth, J. Rehage. Population: Problems and Trends of Our Changing Population. (Problems in American Life, no. 13) Washington, D.C.: National Association of Secondary-School Principals and the National Council for the Social Studies, National Education Association, 1943. 64 pps. Of historical interest.

Massialis, Byron G. and Zevin, Jack. "Analyzing Population Data," in their Creative Encounters in the Classroom: Teaching and Learning Through Discovery. New York: Wiley, 1967. pps. 106-124.

Moore, John A. Science for Society: A Bibliography. Washington, D.C.: American Association for the Advancement of Science, 1971. 2nd ed. Esp. pps. 49-66.

* Population Curriculum Study. University of Delaware, Newark, Delaware. Professors Val Arnsdorf and Robert Stegner. K-12.

Sikes, O. J., III. Teachers' Reference on Population Problems. rev. ed. Yanceyville, North Carolina: Caswell Family Planning Program, 1970. K-12.

* Sourcebook on Population for the Middle School. New York: Teachers' College, Columbia University. Professors Hazel Hertzberg and Willard Jacobson. Grades 5-7.

U.S. Department of State, Agency for International Development, Office of Population. Population Program Assistance: Aid to Developing Countries by the United States, Other Nations, and International and Private Agencies. Washington, D.C.: Agency

for International Development, October, 1970. (Annually)

Wooster, Theodore A. Population Education--Let's Do It. Sacramento, California: Zero Population Growth, 1971. 46 pps. + appendices.

Wrigley, E. A. Population and History. New York: McGraw-Hill, World University Library, 1969.

Zero Population Growth, Denver Chapter. A Teacher's Guide to Materials on Population. Denver, Colorado: author, n.d.

2 Materials for Students and Teachers

Allen, Rodney F., Kozak, William J., and Rodan, Wayne D. Population Analysis: A Resource Unit for Secondary Schools. Dover, Delaware: State Department of Education, 1968. 101 pps.

American Universities Field Staff. Fieldstaff Perspectives: The Impact of Population Problems. Hanover, New Hampshire: American Universities Field Staff, Inc., 1971. Units include:

"Rising Expectations--Crisis for the Philippines"

"Population Policies in Socialist Yugoslavia"

"Malawi's 'Field Full of Folk' "

"The United Nations System and Population Problems"

"Brazil: Population, Development and the Dream of Greatness"

"Japan's New Population Policies"

"Bolivia's Population--Challenge to Development"

"Singapore: The Case for Efficiency"

"The Dynamics of Population in Afghanistan"

"Kenya: Pioneer in African Family Planning"

* Biological Sciences Curriculum Study, Boulder, Colorado. Investigating Your Environment. Prototype module for 10th grade. (1970).

* Burmann, Allan V., Meyer, Eric A., and Bennet, Peter S. "Population Planning" An Analysis of the Greater Metropolis Area. New Haven,

Connecticut: Connecticut Demographic Council, n.d. 100 pps.

Callahan, Daniel, editor. The American Population Debate. Garden City, New York: Doubleday, 1971.

Cook, Robert C., and Lecht, Jane. People!: An Introduction to the Study of Population. Washington, .D.C.: Columbia Books, for the Population Reference Bureau, 1968. 63 pps. for grades 5-7.

Environmental Science Center, Curriculum Staff. Population: A Ninth Grade Unit. Minneapolis, Minnesota: State Department of Education, n.d. 135 pps. Also units on: "Population Variation,"; "Population Sampling," grades 3-8; and "Population Growth," grade 6-12.

Fisher, Tadd. Our Overcrowded World. New York: Parents Magazine Press, 1969. Senior High School.

"Focus: Population Control--A Study of Social Conflict," Synopsis: Viewpoints of Social Issues--Problems and Remedies. (Evanston, Illinois), 2(10), February 1, 1971. Different views on the problem excerpted from popular literature for students to compare and discuss. Teacher's edition gives full text and question for discussion.

Frankel, Lillian B. This Crowded World: An Introduction to the Study Of Population. Washington, D.C. Columbia Books, for the Population Reference Bureau, 1970. 60pps. For grades 5-7.

Hertzberg, Hazel. Teaching Population Dynamics: An Instructional Unit for Secondary School Studies. New York: Teachers College, Columbia University, 1965: 91 pps.

High School Geography Project of American Association of Geographers. Geography in an Urban Age: Manufacturing and Agriculture. New York: Macmillan Co., 1969.

*Lee, Everett S. Population Profiles. (13 interrelated units). Washington, Connecticut: Center for Information on America, forthcoming. For senior high school.

Loew, Jane. Population Dynamics. Weston, Massachusetts: Weston High School, 1967.

Lowenherz, Robert J. Population. Mankato, Minnesota: Creative Education Press, 1970. 120 pps. Age 10+.

Massialas, Byron and Zevin, Jack. Man and his Environment. Chicago; Rand McNally, 1969. (Particularly exercise 4, "Analyzing why People

Migrate," pp. 37-65).

McGuen, Gary and David L. Bender, eds. The Ecology Controversy: Opposing Viewpoints. (Critical Issues Series: Vol. III) Anoka, Minnesota: Greenhaven Press, 1970.

* Miles, Rufus E., Jr. The World Population. Washington, D.C.: Population Reference Bureau, forthcoming. Senior high school.

Oppenheimer, Valerie K. Population. (Headline Series no. 206). New York: Foreign Policy Association, June, 1971.

* Population Unit for 12th grade "Problems of Democracy" course. Indiana University, Bloomington, Indiana. Drs. Howard Mehlinger and Jerry Brown.

Science Curriculum Improvement Study (SCIS). Populations (1969). University of California, Berkeley, California. A Preliminary edition of a unit on populations--plant and animal--to be used in the third year of a total elementary science sequence; includes activities and teaching suggestions. The emphasis is on the biotic community; little reference to man directly.

Pringle, Laurence. One Earth, Many People: The Challenge of Human Population Growth. New York: Macmillan Co., 1971. 86 pps. Age 10+.

Spence, Lucile. Critical Stages in Reproduction: Instruction Materials in General Science and Biology. New York: Teachers College, Columbia University, 1966. 3rd ed. 117 pps.

Social Issues Resource Systems. Population. Washington, D.C: Exotech Systems, September, 1971.

Sociological Resources for the Social Studies of the American Sociological Association:

Hughes, Helen M., editor. Cities and City Life. (Readings in Sociology Series). Boston: Allyn and Bacon, 1970.

Hughes, Helen M., editor, Life in Families. (Readings in Sociology Series). Boston: Allyn and Bacon, 1970.

Hughes, Helen M., editor. Population Growth and the Complex Society. (Readings in Sociology Series). Boston: Allyn and Bacon, forthcoming.

(Experimental units had been developed on the following subjects: "Family Size and Society" by George C. Meyers; "Migration Within the United States" by Basil G. Zimmer.)

Sociology: Modular Learning Unit. (Investigating Man's World Series: Regional Studies). Glenview, Illinois: Scott, Foresman, 1970. 48 pps. Entire unit devoted to population.

Sorvall, Vivian. Overpopulation: How Many are too Many? West Haven, Connecticut: Pendulum Press, Inc., 1971. 63 pps.

Spicer, Douglas. Population Issues: Everyone's Concern? (Experimental edition). Ithaca, New York: International Population Program, Cornell University, April, 1971. mimeo 33 pps. + appendices.

United Nations, Department of Economic and Social Affairs. A Concise Summary of the World Population Situation in 1970. (Population Studies, no. 48) New York: United Nations, 1971.

U.S. Bureau of the Census. Pocket Data Book, U.S.A.; 1971. Washington, D.C.: U.S. Government Printing Office, 1971. Issued biennially.

U.S. Bureau of the Census. Supplemental Courses for Case Studies in Surveys and Censuses, Demography Lectures. (ISP Supplemental Course Series, no. 2). Washington, D.C.: Bureau of the Census, 1969. Brief series of definitions of demographic concepts and terminology.

U.S. Department of Commerce. Uncle Sam Counts, The Story of Census '70. (Do You Know Your Economic ABC's? series). Washington, D.C.: Department of Commerce, 1971.

Van Vleck, David B. How and Why Not to Have that Baby. Charlotte, Vermont: Optimum Population Inc., 1971. 32 pps. Senior high school.

Wisconsin Department of Public Instruction. Pollution: Problems, Projects, and Mathematical Exercises, Grades 6-9. Madison, Wisconsin: author, n.d.

Wozniak, Paul and Vaukey, David. Exercises in Demographic Analysis: Student's Manual and Exercises in Demographic Analysis: Instructor's Manual. Amherst, Massachusetts: Department of Sociology and Anthropology, University of Massachusetts, 1968. Senior high school.

3. Serial Publications

The Population Council
245 Park Avenue
New York, New York 10017

Studies in Family Planning, a monthly bulletin.

Current Publications in Population/Family Planning, a four-page abstract/bibliography, issued every other month.

Country Profiles, a series covering the nature, scope, and accomplishments of population activites in various countries based on an internationally comparable outline. Issued when available.

Reports on Population/Family Planning, papers of four to fifty pages setting out the best current experience, information, and evidence on central topics in population/family planning. Issued when available.

Population Chronicle, a quasi-popular publication providing information on developments in the population field. Issued quarterly.

Council publications suitable for senior high use and teachers primarily.

The Population Reference Bureau
1755 Massachusetts Avenue, N.W.
Washington, D.C. 20036

Population Bulletin, focus on important aspects and consequences of population growth in the United States and abroad, issued six times a year.

PRB Selection-Occasional short essays reprinted from existing articles or abridged from speeches.

Population Profile-Concise, illustrated analyses of significant, current population trends,

World Population Data Sheet-An annual 11" x 17½" chart, suitable for wall or desk use, providing detailed population information for 137 countries.

4. Some games and simulations

"Balance," Interact, Lakeside, California. 7th grade to college.

"Baldicer Game," American Freedom From Hunger Foundation, Washington, D.C. Problems of feeding the world's population.

"Extinction: The Game of Ecology," Sinauer Associates, Stamford, Connecticut. Junior high through college.

"Interdependence," Dolpin Educational Resources, Seattle, Washington. Children.

"Population," Urban Systems, Cambridge, Massachusetts. Age 11 through adult.

* "Population Policies Game," Professor Alan Feldt, University of Michigan, Ann Arbor, Michigan.

5. Training and Research Centers

Center for Population Education. Teacher's College, Columbia University, New York, N.Y. Professor Sloan Wayland. Established 1971.

Population Curriculum Center. University of Delaware, Newark, Delware. Professors Val Arnsdorf and Robert Stegner. Established 1970.

Center for Population and Environmental Education. University of North Carolina, Chapel Hill, N.C. Dr. Norton L. Beach, Dean, School of Education. Dr. David Burleson. Established 1971.

Other Universities with an interest in Population Education in the schools:

Cornell University, Ithaca, New York
Professors Joseph M. Stycos and Parker Marden

Florida State University, Tallahassee, Florida
Professors Charles Nam and Byron Massialis

Harvard University, Cambridge, Massachusetts
Dr. David Kline

University of Michigan, Ann Arbor, Michigan
Professor Thomas Poffenberger, Dr. Eugene Weiss

University of the Pacific, Stockton, California
Professor Edward Pohlman

Western Washington State College, Bellingham, Washington
Professor Irwin Slesnick

6. National Organizations with Special Interest in Population Education

Institute for the Study of Health and Society, Washington, .D.C
Dr. C. Ramsey

Planned Parenthood-World Population. New York. Dorothy Millstone

Population Council. New York, N.Y. Stephen Viederman

Population Reference Bureau. Washington, D.C. Michael Brewer

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NOTES AND ACKNOWLEDGMENTS

(1) The idea of revamping the entire curriculum, of basing education on a synthesis of knowledge rather than on a listing of subjects, is an increasingly popular one with a growing body of adherents. The attractiveness of these ideal, if ill-defined, proposals, however, does not obviate the necessity to deal with the education system as it is. That population education would be a part of any synthesis is not at issue. That population education is also viable within the traditonal system, which is our immediate concern, is the basis upon which the present paper is written.

(2) Other reports to the Commission will address themselves to the problems of population education in post-high school education, to the training of specialists in population, and to matters relating to the development of greater population awareness among the population as a whole, including approaches through the mass media.

(3) Frank Lorimer and Frederick Osborn, Population: Problems and Trends of Our Changing Population. Washington, D.C.: National Association of Secondary-School Principals and National Council for the Social Studies, 1943.

(4) Philip M. Hauser, "Population-Gap in the Curriculum," Teachers College Record, vol. 63, no.6, March 1962.

(5) Adapted from Sloan R. Wayland, "Population Education as it Exists Today: A Global Perspective." Paper prepared for Population Education Conference, Carolina Population Center, May 1971.

(6) William B. Stapp, et.al., "The Concept of Environmental Education," in Clay Schoenfeld, editor, Outlines of Environmental Education, Madison, Wisconsin: Dembar Educational Research Services, 1971. pps. 53-54.

(7) Don Davies, Deputy Commissioner for Development, U.S. Office of Education, Testimony before Special Subcommittee on Human Resources, Senate Committee on Labor and Public Welfare, October 14, 1971.

(8) "Population Education: A Challenge of the Seventies," Population Reference Bureau Bulletin, XXVI,3, p.10.

(9) Commission on Population Growth and the American Future, An Interim Report to the President and the Congress. Washington, D.C : U.S. Government Printing Office, 1971.

(10) Paul Vahanian, "Introduction" in Elizabeth S. Force, Teaching Family Life Education: The Toms River Program. N.Y.: Teachers College Press, 1962.

(11) Luther G. Baker, Jr. and James Darcy, "Survey of Family Life and Sex Education Programs in Washington Secondary Schools and Development of Guidelines for Statewide Coordinated Programs," Family Coordinator, 19 (3), July 1970, p.228-233.

(12) Ibid.

(13) Wayland, op.cit., note (5).

(14) This section was prepared in cooperation with the Task Force on Population and Ethics of the Institute of Society, Ethics and the Life Sciences.

(15) Walter E. Howard, "The Population Crisis," The American Biology Teacher, 33(3), March 1971, 149-154.

(16) David Burleson, "The Time Is Now: Population Education," Society for International Development, 11th World Conference, New Delhi, India, November 1970.

(17) Howard, op.cit., note (15).

(18) Richard G. Dawson, "Science and Survival: Report on Pilot Year Programs, 1969-1970." Shawnee Mission South High School, Shawnee Mission, Kansas.

(19) Olivier Jeanneret, "The Process of Socialization in Adolescents: Its Implications for Health Education," International Journal of Health Education, XIII, no. 3, July-September 1970.

(20) Daniel Callahan, "Values, Facts, and Decision-Making," Hastings Center Reports, no.1, June 1971.

(21) Virginia Kidd," "Now you see," said Mark," New York Review of Books, September 3, 1970, 35-36. See also, Majorie B. U'Ren, "The Image of Woman in Textbooks," in Vivian Gornick and Barbara Moran, editors, Woman in Sexist Society, New York: Basic Books, 1971. 219-225.

(22) "Man and Environment: Revised Curriculum" Miami, Florida: Miami-Dade Junior College, November 1970.

(23) Don Davies, op.cit., note (7)

(24) Howard, op.cit., note (15)

(25) "Extinction: The Game of Ecology," Descriptive brochure, Sinauer Associates, Stamford, Connecticut, 1971.

(26) Kids: A Magazine by Kids for Each Other, No.6, 1971.

(27) H. 3787 "providing that Ecology and the Dynamics of Human Population Growth and Consumption Be required Subjects of Instruction in the Public Schools." The Bill was defeated in 1971.

(28) Harold Edgar and Kent Greenawalt, "The Legal Tradition and Some Population Control Measures," in Ethics, Population and the American Tradition, A study prepared for the Commission on Population Growth and the American Future by the Institute of Society, Ethics and the Life Sciences, 1971. Vol.II, B.40-43.

(29) "Social Studies in a Changing World," NICSSE Bulletin (Australia), No.5, June 1971, discussing E. Fenton, The New Social Studies.

(30) Callahan, op.cit., note (20).

(31) Stephen Viederman, "Population Education in the United States: A Preliminary Report to the Commission on Population Growth and the American Future," Population Council, May 27, 1971. The request for information was sent to the environmental education coordinators on the assumption that they would be the education officials most likely to know about population activities. Replies were received from 25 states.

(32) William C. Schefler, Institute Director, personal communication, June 18, 1971.

(33) See for example, David Landes, "The Treatment of Population In History Textbooks," Daedulus, 97 (2), Spring 1968. 363-384

(34) Kathryn Horsley, "Population Education in the Secondary Schools: A Survey of the Art," Report to the Population Reference Bureau from the Institute for the Study of Health and Society, September 30, 1971.

(35) Sloan R. Wayland, "The Development of Population Education in Thailand," Teachers College, Columbia University, October 1971. See, for example, Nancy Russo and Yvonne Brackbill, "Population and Youth," in James T. Fawcett, editor, Psychological Aspects of Population, forthcoming and Nicholas Tavuchis, "Youth and Population: A Review of the Literature," Population Council, 1971.

(36) Ibid.

(37) See Russo and Brackbill, and Tavuchis, op. cit., note (35) and also Jerald G. Bachman, and Elizabeth van Duinen, Youth Looks at National Problems: A Special Report from the Youth in Transition Project. Ann Arbor, Michigan: Institute for Social Research, 1971.

(38) U.S. Senate, Committee on Labor and Public Welfare, Subcommittee on Education. Hearings on the Environmental Quality Education Act, 1970. May 19-20, 1970, and U.S. House of Representatives Committee on Education and Labor, Select Subcommittee on Education. Hearings on the Environmental Quality Education Act of 1970. March, April, May 1970.

(39) U.S. Senate. Hearings. op.cit.,page 109.

(40) Lee Lane. Testimony, October 5, 1971.

(41) Ibid.

(42) Don Davies, op.cit., note (7)

(43) Population Reference Bureau Bulletin, op.cit., note (8).

(44) Don Davies, op.cit., note (7).

(45) Phone conversation with Robert Gilkey, Director, Environmental Education Staff, October 28, 1971. The information, that totally population-oriented projects would be acceptable seems to suggest a change in OE policy. On October 21, 1971 Mr. Gilkey indicated to Lee Lane, ZPG, Inc., Washington Office, that totally population-oriented projects would not be acceptable.

(46) These functions are adapted from those specified for the

Environmental Education Act, PL.91-516, Sec.2. (6), with the addition of the research function not listed therein.

(47) See Wayland, op.cit., note (35), for fuller discussion.

(48) Alan G. Wheeler, personal communication, July 15, 1971.

(49) Edward Pohlman, "Population Education-Critical Questions," Journal of Environment and Behavior, September 1971.

Acknowledgments

The author wishes to acknowledge the assistance of more than 100 colleagues in the United States and overseas who took the time to read, and to offer critical comments on, his paper, "Population Education in the United States: A Preliminary Report to the Commission on Population Growth and the American Future." Special thanks are due Brenda Newman and Lois Kwitman for assistance in preparing the manuscript.

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